

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1 to 8. (Canceled).

9. (Previously Presented) A rotating mechanical seal comprising: a sliding ring (5) being attached to a shaft (1) by an O-ring (6), the sliding ring rotating with the shaft (1); and a non-rotating backing ring (4) which is attached by way of an O-ring (3) to a housing (2) of a compressor so as to be gas-tight, wherein the sliding ring (5) and backing ring (4) are pressed one against the other by way of a spring (8) to form a seal and slide one upon the other, and wherein one of the rings (4, 5) is made of a carbon and silicon carbide composite material and the other of a silicon carbide material,

wherein the carbon and silicon carbide composite material exhibits sealing surface properties with a roughness value of from 0.005 to 0.07  $\mu\text{m}$  and the silicon carbide material exhibits sealing surface properties with a roughness value from 0.002 to 0.03  $\mu\text{m}$ , expressed as mean arithmetic roughness ( $R_a$ ), with the pores being excepted.

10. (Previously Presented) A rotating mechanical seal comprising: a sliding ring (5) being attached to a shaft (1) by an O-ring (6), the sliding ring rotating with the shaft (1); and a non-rotating backing ring (4) which is attached by way of an O-ring (3) to a housing (2) of a compressor so as to be gas-tight, wherein the sliding ring (5) and backing ring (4) are pressed one against the other by way of a spring (8) to form a seal and slide one upon the other, and wherein one of the rings (4, 5) is made of a carbon and silicon carbide composite material and the other of a silicon carbide material,

wherein the carbon and silicon carbide composite material exhibits a structure which is obtained by partial conversion of the surface layer of the carbon substrate into a silicon carbide material, and

wherein the carbon and silicon carbide composite material exhibits sealing surface properties with a roughness value of from 0.005 to 0.07  $\mu\text{m}$  and the silicon carbide material

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